**IN THE CLAIMS:**

Please amend the claims as follows:

1. (Currently amended) An encoding apparatus for producing encoded data blocks, wherein each of said data blocks is one of a macroblock or a slice,

and wherein a first assigned data block assigned to a first process is produced in parallel with a second assigned data block assigned to a second process,

and wherein the first process and the second process respectively include at least:

encoding means for performing a predetermined transform with respect to a ~~predicted~~ prediction error or pixel value of the assigned data block, and quantizing the assigned data block with respect to a predetermined transform coefficient generated in said predetermined transform, and

variable length coding means for performing variable length coding with respect to the result of said quantization to produce said encoded data blocks,

and wherein variable length coding of said second assigned data block begins after variable length coding of said first assigned data block has ended, even if encoding of the second assigned data block is completed prior to the end of variable length coding of the first data block.

2. (Previously Presented) An encoding apparatus as set forth in claim 1, wherein said variable length coding means detects completion of variable length coding of a current data block and starts variable length coding of a subsequent data block.

3. (Previously Presented) An encoding apparatus as set forth in claim 2, further comprising:

a fixed length encoding means for performing fixed length encoding for each data block comprising an image slice, and wherein

said variable length coding means performs variable length coding on each slice data block.

4. (Previously Presented) An encoding apparatus as set forth in claim 3, wherein said fixed length encoding means comprises:

a motion compensation predicting means for selectively carrying out motion compensation prediction by referring to a reference image,

a transform means for carrying out a predetermined transform with respect to pixel data of a result of said motion compensation prediction or with respect to original pixel data to provide transformed block data, and

a quantizing means for quantizing the transformed block data to provide quantized block data, and

a local decoding means for decoding the transformed block data to generate the reference image to be supplied to said motion compensation predicting means, and wherein

said variable length coding means carries out variable length coding on the quantized block data.

5. (Previously Presented) An encoding apparatus as set forth in claim 4, wherein said data blocks are macroblocks.

6. (Previously Presented) An encoding apparatus as set forth in claim 4, wherein said predetermined transform is any of a discrete cosine transform, a Fourier transform, a Hadamard transform, and a K-L transform.

7. (Currently amended) An encoding method for encoding a data stream, the method comprising:

dividing said data stream into a plurality of data blocks, each data block comprising one of a macroblock and a slice;

encoding said data blocks in parallel to produce encoded data blocks, wherein for each respective data block, said encoding step comprises performing a predetermined transform with respect to a ~~predicted~~ prediction error or pixel value of the data block, and quantizing the data block with respect to a predetermined transform coefficient generated in said predetermined transform;

successively carrying out variable length coding for each of the encoded data blocks with respect to the result of said quantizing step; and

successively allotting additional data blocks that have completed variable length coding; wherein

the variable length coding of a second data block begins after variable length coding of a first data block has ended, even if encoding of the second data block is completed prior to the end of variable length coding of the first data block.

8. (Previously Presented) An encoding method as set forth in claim 7, further comprising detecting when variable length coding for a current data block has been completed and beginning variable length coding of a subsequent data block.

9. (Previously Presented) An encoding method as set forth in claim 8, wherein

said data stream comprises image data,

and further comprising:

performing motion compensation prediction for said data blocks by referring to a reference image to generate compensated data blocks;

performing a predetermined transformation on the compensated data blocks to generate transformed data blocks;

quantizing the transformed data blocks to generate quantized data blocks; and

obtaining the reference image from at least one of the quantized data blocks.

10. (Currently amended) A decoding apparatus for decoding a data stream comprising a plurality of data blocks, the decoding apparatus comprising:

a system comprising a signal processing device, wherein

each data block comprises a macroblock or a slice,

and wherein a first assigned data block is decoded in parallel with a second assigned data block,

and wherein the signal processing device includes at least:

variable length decoding means for performing variable length decoding with respect to encoded data of the first and second assigned data blocks, and

decoding means for performing an inverse quantization with respect to the result of said variable length decoding, and an inverse predetermined transform with respect to the result of said inverse quantization,

and wherein variable length decoding of said second assigned data block begins after variable length decoding of said first assigned data block has ended, ~~even if decoding of the second assigned data block is completed prior to the end of variable length decoding of the first assigned data block~~ and is performed in parallel with decoding of the first assigned data block.

11. (Previously Presented) A decoding apparatus as set forth in claim 10, wherein said variable length decoding means detects completion of the variable length decoding of a current data block and starts variable length decoding of a subsequent data block.

12. (Previously Presented) A decoding apparatus as set forth in claim 11, further comprising an allotting means for sequentially allotting the data blocks to said signal processing device, and

wherein the signal processing device performs both the variable length decoding and the fixed length decoding of each data block.

13. (Previously Presented) A decoding apparatus as set forth in claim 11, wherein said data stream is a variable length coded image data stream obtained by fixed length and variable length encoding of image data blocks and wherein the signal processing device performs both the variable length decoding and the fixed length decoding of each data block.

14. (Previously Presented) A decoding apparatus as set forth in claim 13, wherein said decoding means of said signal processing device comprises

an inverse quantizing means for inverse quantizing variable length decoded data blocks to obtain inverse quantized data blocks,

an inverse transform means for carrying out an inverse transform on said inverse quantized data blocks to obtain inverse transformed data blocks,

an image data generating means for generating original image data by referring to a reference image, and

a motion compensation processing means for carrying out motion compensation processing based on at least one of the inverse transformed data blocks and said image data blocks to generate said reference image.

15. (Previously Presented) A decoding apparatus as set forth in claim 14, wherein said image data blocks are macroblocks.

16. (Previously Presented) A decoding apparatus as set forth in claim 14, wherein said inverse transform is one of a discrete cosine transform, Fourier transform, Hadamard transform, and K-L transform.

17. (Currently amended) A decoding method for decoding a data stream comprising a plurality of data blocks wherein each data block is one of a macroblock or a slice, the method comprising:

carrying out variable length decoding on each of the data blocks followed by fixed length decoding of each of the data blocks,

wherein ~~a signal processing device performs the variable length decoding and fixed length decoding of the data blocks in parallel~~ said variable length decoding is variable length decoding with respect to encoded data of each data block and producing quantized data blocks, and wherein

said ~~variable length decoding and~~ fixed length decoding of each data block comprise:

~~variable length decoding with respect to encoded data of each data block, and producing quantized data blocks, and~~

performing an inverse quantization with respect to the result of said variable length decoding, and an inverse predetermined transform with respect to the result of said inverse quantization , and wherein

variable length decoding of a second data block begins after variable length decoding of a first data block has ended, ~~even if decoding of the second data block is completed prior to the end of variable length decoding of the first data block~~ and is performed in parallel with fixed length decoding of the first assigned data block.

18. (Previously Presented) A decoding method as set forth in claim 17, wherein said signal processing device detects when variable length decoding for a first data block has been completed and begins variable length decoding of a second data block.

19. (Previously Presented) A decoding method as set forth in claim 18, wherein

said data stream comprises a plurality of image data blocks,

and further comprising, in said signal processing device,

inverse quantizing the image data blocks to generate quantized data blocks;

performing an inverse transformation on the quantized data blocks to generate transformed data blocks;

obtaining original image data from at least one of the transformed data blocks; and

performing motion compensation processing for said transformed data blocks.